

THE *ANTHONOMUS GIBBICRUS* SPECIES GROUP (COLEOPTERA: CURCULIONIDAE)

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Abstract.—Two new neotropical anthonomine weevil species, *Anthonomus gibbicrus* Clark (México) and *A. denticrus* Clark (Bolivia, Brazil, Colombia, Panamá, Venezuela), are assigned to the *Anthonomus gibbicrus* group. Characters of the *A. gibbicrus* group and of the species in the group are described and a key to the species is presented. The habitus, female pygidium and male genitalia of the two species, and the femur and tibia of one of the species, are illustrated with photographs.

Key Words: Coleoptera, Curculionoidea, Curculionidae, *Anthonomus denticrus*, *Anthonomus gibbicrus*

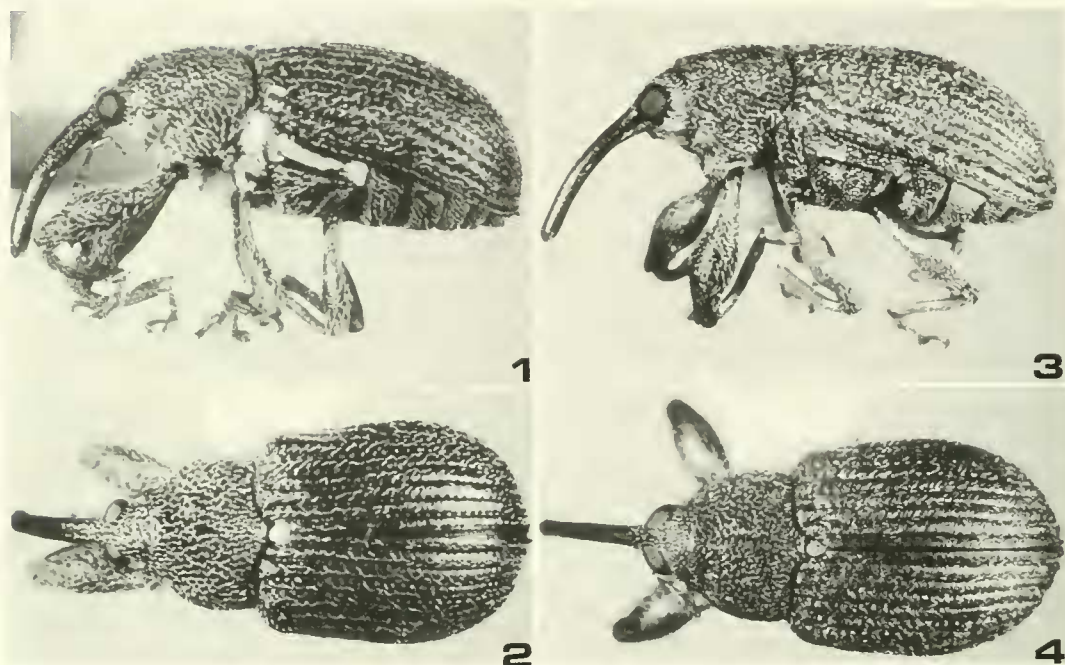
Recent studies of the New World species of *Anthonomus* Germar (summarized by Clark 1993) have resulted in revisions of several of the species groups recognized by Champion (1903) and of some newly established groups. Most of the revisions have treated previously described species as well as new species, but two (Clark 1991a, Clark and Burke 1993) have dealt only with previously unknown species. The subject of this paper is another group containing only heretofore undescribed species. Descriptions, illustrations, and a key to the species in this group are presented.

MATERIALS AND METHODS

The 69 adult weevils examined are from the collections of the following individuals and institutions (abbreviations identify the collections in the text): Collection of H. A. Hespenheide, Los Angeles, California, USA (CHAH); California Insect Survey, University of California, Berkeley, California, USA (CISC); National Museum of Natural Sciences, Ottawa, Canada (CMNC); Collection of C. W. O'Brien, Tallahassee, Florida, USA

(CWOB); Deutsches Entomologisches Institut, Eberswalde, Germany (DEIC); Collection E. L. Sleeper, Long Beach, California, USA (ELSC); Collection of H. P. Stockwell, Smithsonian Tropical Research Institute, Ancon, Panamá (HPSC); Universidad Central de Venezuela, Maracay, Venezuela (IZAV); Museum of Comparative Zoology, Cambridge, Massachusetts, USA (MCZC); Texas A&M University, College Station, Texas, USA (TAMU); National Museum of Natural History, Washington, D.C., USA (USNM).

Measurements were made with the aid of an ocular micrometer in a dissecting microscope as follows: total length from anterior edge of eye to elytral apex in lateral view; width across elytra at widest point; length of pronotum, dorsally, from anterior to posterior margins; length of rostrum from anteroventral edge of eye to apex, across the arc, in lateral view; length of apical portion of rostrum from antennal insertions to apex in lateral view; width of frons at narrowest point between eyes; width of base of rostrum just distad of eyes in dorsal view; and



Figs. 1-4. *Anthonomus gibbicrus* group members, habitus, lateral and dorsal views. 1, 2) *A. gibbicrus*, female, km. 79 Cuautla-Oaxaca, Morelos, México. 3, 4) *A. denticrus*, female, 5 mi. NW Gamboa, Panamá, Panamá.

width of pro- and metafemora, in anterior view, excluding the ventral teeth. The range and, in parentheses, the mean and sample size, of each measurement are given for each species.

Exact data are cited for types. Separate labels are indicated by brackets ([]), each separate line by a virgule (/).

THE *ANTHONOMUS GIBBICRUS* SPECIES GROUP

Recognition.—The species in the *A. gibbicrus* group are middle-sized (length 2.08–3.28 mm) *Anthonomus* with posteriorly widened elytra (Figs. 1, 2) and relatively uniformly ferruginous to piceous integument. The profemur is inflated much more strongly anteriorly than posteriorly and bears a large, blunt, anteromedian tooth in the basal $\frac{1}{2}$ (Fig. 8), a long, parallel-sided, apically blunt, ventral tooth and a shorter, blunt, more distal ventral tooth (Fig. 7). In addition, the protibia is curved in the basal

$\frac{1}{2}$ and abruptly widened subapically (Fig. 7).

The species also have the following characters: *Head*: eyes separated by distance ca. $0.8\times$ width of rostrum at base; antennal funiculus with 7 articles. *Rostrum*: male short, stout; female, slender, slightly, evenly curved from base to apex. *Prothorax*: coarsely, densely punctate; each puncture with a slender, attenuate scale. *Elytra*: interstria 3 slightly prominent at base; interstriae otherwise uniform in width and slightly convexity, each with sparse, slender, attenuate scales. *Pygidium*: small, slightly concave apicomediaally. *Abdomen*: sterna 4 and 5 subequal in length. *Legs*: profemur ca. $0.7\times$ wider than metafemur; metafemur with 1 small, conical, acute ventral tooth; protibial uncus short, acute. *Male genitalia* (Figs. 9, 10): tegmen without parameres; endophallus unarmed.

Plant associations.—Two specimens of *A. denticrus* have labels indicating that they

were collected on ferns (*Gleichenia* sp., Gleicheniaceae). No anthonomines have been heretofore reported to develop on ferns (Burke 1976) and these seem likely to be incidental associations rather than true host associations. The "cactus" and "orchid" records for the same species are likewise doubtful host associations.

Distribution.—The species in the *A. gibbicrus* group and their known geographical distributions are the following.

Anthonomus gibbicrus Clark México

Anthonomus denticrus Clark Bolivia, Brazil, Colombia, Costa Rica, Panamá, Venezuela

Relationships.—The apparent close relationship of the *A. marmoratus*, *A. partarius* and *A. rubiginosus* species groups to each other was noted by Clark (1991b, 1992a, b). The species in the *A. gibbicrus* group have characters in common with certain species in these groups. The enlarged profemur with the long, slender, parallel-sided ventral tooth and shorter, blunt, more distal tooth is similar to that of some of the species in the *A. marmoratus* group, especially to *A. pruinosis* Champion (cf. Fig. 9 and Clark 1992b, Fig. 19), while the inflation of the anterior portion of the profemur is similar to that in *A. potestatus* Clark of the *A. partarius* group (cf. Fig. 8 and Clark 1992a, Fig. 34) and to *A. nihilum* Clark of the *A. rubiginosus* group (cf. Fig. 8 and Clark 1991b, Fig. 30). The latter species has transverse carinae across the basal portion of anterior profemoral tumescence in the position in which the species in the *A. gibbicrus* group have a large, blunt, antero-medial tooth (cf. Fig. 7 and Clark 1991b, Fig. 30).

KEY TO SPECIES IN THE *ANTHONOMUS GIBBICRUS* GROUP

1. Eyes oblong, strongly prominent in dorsal and lateral views (Figs. 1, 2); anterodorsal margin of prothorax slightly concave, anterolateral margins with slight postocular lobes (Figs. 1,

2); pronotum and elytra with cinereous scales; aedeagus widened subapically, with small apical prominence (Fig. 9); rostrum of female densely punctate proximally (Figs. 1, 2); pygidium of female slightly constricted apicolaterally, without apical patch of short setae (Fig. 5) *A. gibbicrus*

- 1'. Eyes round, not prominent in dorsal or lateral views (Figs. 3, 4); anterodorsal margin of prothorax straight, anterolateral margins without postocular lobes (Figs. 3, 4); pronotum and elytra with ferruginous scales; aedeagus subparallel-sided, narrowed to blunt apex (Fig. 10); rostrum of female nearly smooth proximally (Figs. 3, 4); pygidium of female rounded apically, with apical patch of short setae (Fig. 6) *A. denticrus*

Anthonomus gibbicrus Clark

NEW SPECIES

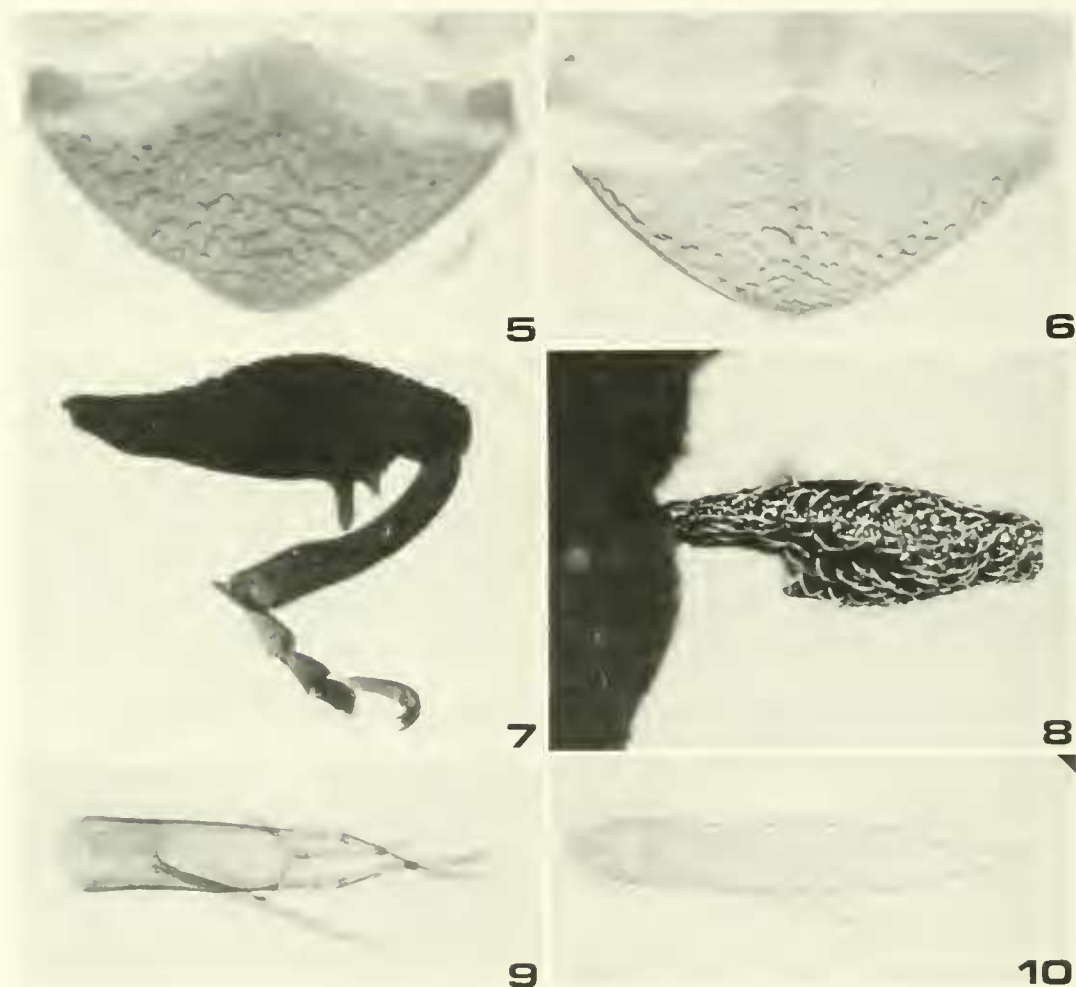
Figs. 1, 2, 5, 7–9

Holotype. MEXICO. *Morelos*: male [MEXICO, Morelos./ km. 79 Cuautla-Oaxaca/ 1-28-88 E. Barrera./ A. Cadena, E. Ramirez] [C. W. OBRIEN/ COLLECTION] (CWOB).

Paratypes (38).—MEXICO. 1 male [Mexico/ Nog. 75646/ X-29-56-13883] [C Cactus/ plants] (USNM). *Guerrero*: 2 males [MEX: Guer. 10.7 km. SW./ Xochipala 1753 m 87-7/ 5.vii.87 R. Anderson/ Acacia-oak woodland] (CMNC, TAMU). *Morelos*: 19 males, 13 females [MEXICO, Morelos./ km. 79 Cuautla-Oaxaca/ 1-28-88 E. Barrera./ A. Cadena, E. Ramirez] [C. W. OBRIEN/ COLLECTION] (CWOB). *Sinaloa*: 1 male [MEX Sinaloa./ Caliacan (sic.), 19/ mi. 2. VI-22-63] [J. Doyen/ Collector] (CISC); 1 male [Mazatlan/ Sin. Mex./ Lar. Tex. 60636/ 3-24-60-8552] [orchid/ plants] (USNM); 1 male [MEX., Sinaloa./ Rio Piaxtla 1 mi./ W Mex. No. 15] [E. L. Sleeper/ R. C. Anderson/ Collr.] [E. L. Sleeper/ Collection] (ELSC).

Recognition characters.—*Anthonomus gibbicrus* is distinguished from the related *A. denticrus* by the characters presented in the key.

Male.—*Length*: 2.08–3.00 mm (mean 2.70, n = 10). *Width*: 1.18–1.50 mm (mean = 1.38, n = 10). *Head*: eyes oblong, prom-



Figs. 5-10. *Anthonomus gibbicrus* group members. 5-10) pygidium, female, dorsal view. 5—*A. gibbicrus*, km. 79 Cuautla-Oaxaca, Morelos, México. 6—*A. dentatus*, 6 mi. S. 6 mi. W. Cañas, Taboga, Guanacaste, Costa Rica. 7-8) *A. gibbicrus*, profemur, male, km. 79 Cuautla-Oaxaca, Morelos, México. 7—anterior view. 8—dorsal view. 9-10) *A. gibbicrus* group members, aedeagus, dorsal views of holotypes. 9—*A. gibbicrus*. 10—*A. dentatus*.

inent in dorsal and lateral views. *Rostrum*: 1.05-1.28 length (mean = 1.17, $n = 10$) $\times$ pronotal length; rugose proximally, punctate distally; length of apical portion 33-50% (mean = 40, $n = 10$) of total rostral length. *Prothorax*: anterodorsal margin slightly concave; anterolateral margins with slight postocular lobes; each puncture with a cinereous scale; lower portion of pleuron with broader, cretaceous scales. *Elytra*: with sparse, slender, attenuate, cinereous scales.

Genitalia (Fig. 9): aedeagus widened subapically, with small apical prominence.

Female.—*Length*: 2.52-3.28 mm (mean = 2.92, $n = 10$). *Width*: 1.30-1.76 mm (mean = 1.50, $n = 10$). *Rostrum*: 1.24-1.58 length (mean = 1.37, $n = 10$) $\times$ pronotal length; length of apical portion 38-49% (mean = 41, $n = 10$) of total rostral length. *Pygidium* (Fig. 5): slightly constricted apicolaterally, without apical patch of short setae.

Distribution.—*Anthonomus gibbicrus* is

known only from the type series from México.

Etymology.—The species epithet, from Latin words meaning swollen and leg, refers to the enlarged profemur of *A. gibbicrus*.

***Anthonomus denticrus* Clark,**

NEW SPECIES

Figs. 3, 4, 6, 10

Holotype.—COSTA RICA. *Puntarenas*: male [C.R., Puntarenas/ Las Cruces, 7 Km. S/ San Vito, 11-20-23/ 1987; J. Negron] [C. W. OBRIEN/ COLLECTION] (CWOB).

Paratypes (29).—BOLIVIA. 1 male [Bolivien/ Germain] [Coll. Kraatz] [Coll. DEI/ Eberswalde] (DEIC). *Bení*: 1 female [Rurrenbaque./ Beni, Bolivia/ 175 m. X-5-56] [L. E. Pena/ Collr.] [E. L. Sleeper/ Collection] (ELSC). BRAZIL. *Mato Grosso*: 1 male, 1 female [BRASIL, Mato Grosso/ Sinop (12°31'S./ 55°37'W) X-1974/ M. Alvarenga] (CWOB). COLOMBIA. *Magdalena*: 2 males, 4 females [Altagracia, Mgd./ Colombia/ Darlington] (MCZC); 1 male, 3 females [Sevilla, Mgd./ Colombia/ Darlington] (MCZC). *Santander del Norte*: 1 male [Prima/ Colombia, Santan-/ der del Norte 1700 m/ I-VI-1965.] [J. & B. Bechyne/ leg.] (IZAV). COSTA RICA. *Guanacaste*: 1 male [COSTA RICA/ Guanacaste Prov./ 6 mi. S, 6 mi. W./ Cañas, Taboga/ 10°19'N 85°09'W] [13-20.ii.1967/ H. A. Hespeneheide] (CHAH); 1 female [COSTA RICA/ Guanacaste Prov./ 6 mi. S, 6 mi. W./ Cañas, Taboga/ 10°19'N 85°09'W] (15.ii.1967/ H. A. Hespeneheide] (CHAH). PANAMA. *Panamá*: 1 female [Barro Colo Id/ C. Z. VI-X-43/ Z-5104] [Jas Zetek/ No] (USNM); 1 female [PANAMA: C. Z./ 5 mi. NW Gamboa/ 23 Feb. '75/ H. P. Stockwell] [beating foliage/ *Gleichenia* sp.] [Anthon./ 28] (HPSC); 1 female [PANAMA: C. Z./ 5 mi. NW Gamboa/ 23 Feb. '75/ H. P. Stockwell] [on fern/ *Gleichenia* sp.] (HPSC); 1 female [Panamá, C. Z./ 5 mi. NW Gamboa/ 9°10'N, 79°43'W] [20 Mar. '76/ H. P. Stockwell] (HPSC); 1 female [PANAMA: C. Z./ 5 mi. NW. Gamboa/ 6 April '76/ Y. Lubin] [Malathion/ canopy fog] (HPSC); 3 males, 3 fe-

males [Pipeline Road/ Panamá Canal Zone/ 28-XI-76/ Col: D. Engleman] [at light above/ canopy] (CWOB). VENEZUELA. *Zulia*: 1 male [Venezuela - Zulia/ El Tucuco 420 m/ 21-27-V-1971] [C. J. Rosales/ J. Salcedo/ A. Ramirez] (IZAV).

Recognition characters.—*Anthonomus denticrus* is distinguished from the related *A. gibbicrus* by the characters presented in the key.

Male.—*Length*: 2.64–2.88 mm (mean = 2.82, $n = 9$). *Width*: 1.36–1.48 mm (mean = 1.43, $n = 9$). *Head*: eyes round, broadly, evenly convex, not prominent in dorsal view, not prominent in lateral view. *Rostrum*: 1.05–1.31 length (mean = 1.20, $n = 9$) $\times$ pronotal length; rugose proximally, punctate distally; length of apical portion 33–36% (mean = 34, $n = 9$) of total rostral length. *Prothorax*: anterodorsal margin straight; anterolateral margins without postocular lobes; each puncture with a ferruginous scale; lower portion of pleuron with broader, ferruginous scales. *Elytra*: interstriae with sparse, slender, attenuate, ferruginous scales. *Genitalia* (Fig. 10): aedeagus subparallel-sided, narrowed to blunt apex.

Female.—*Length*: 2.48–3.16 mm (mean = 2.84, $n = 10$). *Width*: 1.02–1.72 mm (mean = 1.46, $n = 10$). *Rostrum*: 1.06–1.95 length (mean = 1.46, $n = 10$) $\times$ pronotal length; length of apical portion 30–52% (mean = 40, $n = 10$) of total rostral length. *Pygidium* (Fig. 6): rounded apically, with apical patch of short setae.

Distribution.—*Anthonomus denticrus* is known only from the type series from Bolivia, Brazil, Colombia, Costa Rica, Panamá and Venezuela.

Etymology.—The species epithet, from Latin words meaning tooth and the leg, refers to the anteromedian tooth on the inner margin of the profemur of *A. denticrus*.

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